What is claimed is:

1. A method for filtrating a polymer solution by using a filter medium, a polymer being dissolved to a solvent to prepare said polymer solution, said filter medium having many pores for trapping undissolved particles of an at least predetermined size, said method comprising:

adding to said polymer solution at least one sort of acidic materials before passing said polymer solution through said film medium.

2. A method as claimed in claim 1, wherein said acidic material reduces said undissolved particles under the predetermined size from adhering to a pore wall of said pore.

3. A method as claimed in claim 1, wherein the ionization constant (pKa) is at most 4.8 at 25 °C in an aqueous solution in which said acidic material is dissolved to water.

4. A method as claimed in claim 1, wherein said polymer is cellulose ester.

5. A method as claimed in claim 3 wherein said acidic material is at least one of carboxylic acid, polycarboxylic acid and derivatives of said polycarboxylic acid, and said derivative includes salt form.

6. A method as claimed in claim 5, wherein each molecule of said derivatives has at least one carboxyl group and at least one salt form of said carboxylate group, and is at least one of following substances:

ester of polycarboxylic acid having fatty hydrocarbon

structure;

amide of polycarboxylic acid having fatty hydrocarbon structure;

ester of polycarboxylic acid having aromatic hydrocarbon structure;

amide of polycarboxylic acid having aromatic hydrocarbon structure;

ester of polycarboxylic acid having heterocyclic hydrocarbon structure; and

amide of polycarboxylic acid having heterocyclic hydrocarbon structure.

7. A method as claimed in claim 6, wherein said filter medium is formed of at least one of natural fiber, regenerated fiber, semi-synthetic fiber, synthetic fiber, and metal fiber.

8. A method as claimed in claim 7, wherein said filter medium is formed of cellulose fibers, and substituents or acidic groups are substituted for hydrogen atoms in at least several ones of plural hydroxyl groups of said cellulose fiber.

9. A method as claimed in claim 8, wherein the predetermined size is in the range of 1 to 10 μm.

10. A method as claimed in claim 9, wherein flow rate of said polymer solution is constant while said polymer solution is filtrated.

11. A method as claimed in claim 10, wherein said flow rate is in the range of 50 - 250 $L/(m^2 \cdot hr)$.

12. A method as claimed in claim 11, wherein said polymer is cellulose ester.

13. A method as claimed in claim 12, wherein chlorinated organic solvent is used as a main solvent of said solvent.

14. A method as claimed in claim 12, wherein nonchlorinated organic solvent is used as a main solvent of said solvent.

15. A method for filtrating a polymer solution by using a filter medium, a polymer being dissolved to a solvent to prepare said polymer solution, said filter medium being formed of cellulose fiber and having many pores for trapping undissolved particles of an at least predetermined size, said method comprising:

substituting one or more substituents or acidic groups for hydrogen atoms in at least several ones of plural hydroxyl groups of said cellulose fiber before passing said polymer solution through said filter medium.

16. A method as claimed in claim 15, wherein said polymer is cellulose ester.

17. A method as claimed in claim 15, wherein said substituents or acidic groups reduce said undissolved particles under the predetermined size from adhering to a pore wall of said pore.

18. A method as claimed in claim 17, wherein said solvent is prepared in steps of:

adding a predetermined volume of water to a sample solvent which is sampled from said solvent, said predetermined volume

being from 0.1 to 10 times as large as that of said sample solvent;

extracting water-soluble elements in said sample solvent by said water;

measuring a hydrogen ion concentration of said water; and

adjusting a hydrogen ion concentration of said solvent such that the hydrogen ion concentration of said water becomes predetermined value.

19. A method as claimed in claim 18, wherein said substituent is at least one of following groups:

saturated hydrocarbon or derivative thereof;

nonsaturated hydrocarbon or derivatives thereof; and

aromatic hydrocarbon or derivatives thereof.

20. A method as claimed in claim 18, wherein said acidic atomic group is at least one of following groups:

carboxyl group;

salt form of carboxyl group;

sulfonic acid group; and

salt form of sulfonic acid group.

21. A method as claimed in claim 20, wherein the predetermined size is 1 - 10 μm.

22. A method as claimed in claim 21, wherein flow rate of said polymer solution is constant during the filtration of said polymer solution.

23. A method as claimed in claim 22, wherein said flow rate is in the range of 50 - 250 $L/(m^2 \cdot hr)$.

24. A method as claimed in claim 17, wherein said polymer is cellulose ester.

25. A method as claimed in claim 24, wherein chlorinated organic solvent is used as a main solvent of said solvent.

26. A method as claimed in claim 24, wherein nonchlorinated type organic solvent is used as a main solvent of said solvent.

27. A method as claimed in claim 17, wherein said polymer solution is used for producing a polymer film in a solution casting method.

28. A method as claimed in claim 27, wherein said solution casting method is a co-casting method in which plural polymer solutions are cast simultaneously.

29. A method as claimed in claim 27, wherein said polymer film is used as a protective film for a polarizing filter.

30. A method as claimed in claim 29, wherein said polarizing filter is used in a liquid crystal display.

31. A method as claimed in claim 27, wherein said polymer film is used for an optical compensation film.

32. A method for preparing a solvent used for dissolving polymer to produce a polymer solution, comprising steps of:

adding a predetermined volume of water to a sample solvent which is sampled from said solvent, said predetermined volume

being from 0.1 to 10 times as large as that of said sample solvent;

extracting water-soluble elements in said sample solvent by said water;

measuring a hydrogen ion concentration of said water; and

adjusting a hydrogen ion concentration of said solvent such that the hydrogen ion concentration of said water becomes a predetermined value.

33. A method as claimed in claim 32, wherein said polymer is cellulose ester.

34. A method as claimed in claim 32, wherein a following formula is satisfied when the hydrogen ion exponent (x) and percentage of water content of said sample solvent are respectively represented as x and y (wt. %):

$y < 0.0032x^2 - 0.093x + 1.20$

35. A method as claimed in claim 34, wherein the hydrogen ion exponent (x) satisfies a formula of $3 \leq x \leq 12$.

36. A method as claimed in claim 34, wherein the percentage of the water content (y) (wt.%) of said sample solvent satisfies a formula $0.2 \leq y$.

37. A method as claimed in claim 34, wherein at least one of sodium hydroxide aqueous solution, sodium acetate aqueous solution and sodium salicylate aqueous solution is added to said solvent in order to increase the hydrogen ion exponent (pH), and at least one of acetylic acid and citric acid is added to said solvent in order to decrease the hydrogen ion exponent

(pH).

38. A producing method for a polymer solution, comprising steps of:

preparing a solvent in following steps:

A. adding to a predetermined volume of water to a sample solvent which is sampled from said solvent, said volume being from 0.1 to 10 times as large as that of said sample solvent;

B. extracting water-soluble elements in said sample solvent by said water;

C. measuring a hydrogen ion concentration of said water; and

D. adjusting a hydrogen ion concentration of said solvent such that the hydrogen ion concentration of said water becomes a predetermined value.

dissolving a polymer in said solvent to obtain said polymer solution; and

passing said polymer solution through a filter medium before producing a film in a solution casting method, so as to remove from said polymer solution undissolved substances having at least predetermined size.

39. A producing method for a polymer solution as claimed in claim 38, further comprising adding at least one of acidic materials to said polymer solution before passing said polymer solution through said filter medium.

40. A producing method for a polymer solution as claimed in claim 38, wherein said polymer is cellulose ester.

41. A producing method for a polymer solution as claimed in claim 38, wherein said filter medium is a depth filter.

42. A producing method for a polymer solution as claimed in claim 41, wherein said depth filter is formed of metal or polypropyrene.

43. A producing method for a polymer solution as claimed in claim 41, wherein at least two sorts of said depth filters having different absolute filtration accuracies are overlaid in said filter medium.

44. A producing method for a polymer solution as claimed in claim 41, wherein the absolute filtration accuracy of said depth filter is at least 1 μm and at most 6 μm.

45. A producing method for a polymer solution as claimed in claim 41, wherein the nominal pore diameter of said depth filter is at least 1 μm and at most 50 μm.

46. A producing method for a polymer solution as claimed in claim 38, wherein said solvent is heated to 150 °C when said polymer is dissolved in said solvent.

47. A producing method for a polymer solution as claimed in claim 38, wherein said solvent evaporated in producing said film in said solution casting method is recovered and reused for producing said polymer solution.

48. A producing method for a polymer solution as claimed in

claim 38, wherein said filter medium is a paper filter whose diameter of retentive particles is at most 8 μm.

49. A producing method for a polymer solution as claimed in claim 48, wherein time for filtrating said polymer solution is at least 20 seconds.

50. A method as claimed in claim 48, wherein the thickness of said filter paper is at least 0.75 mm.

51. A method as claimed in claim 50, wherein said filter paper is formed from at least one of a cotton linter and a wood pulp.

52. A method as claimed in claim 51, wherein the filtration pressure for filtrating said polymer solution is at most 16 kgf/cm^2.

53. A producing method for polymer film, comprising steps of;

preparing a solvent:

dissolving a polymer in said solvent to obtain said polymer solution;

adding an acidic material to said polymer solution;

filtrating said polymer solution with a first filter medium, said first filter medium having many pores for trapping undissolved particles which has at least a first predetermined size; and

casting said polymer solution on a substrate to form said polymer film.

54. A producing method as claimed in claim 53, wherein said polymer is cellulose ester.

55. A producing method as claimed in claim 54, wherein said solvent is prepared in following steps;

adding to a predetermined volume of water to a sample solvent which is sampled from said solvent, said volume being from 0.1 to 10 times as large as that of said sample solvent;

extracting water soluble elements in said sample solvent by said water;

measuring a hydrogen ion concentration of said water; and

adjusting a hydrogen ion concentration of said solvent such that the hydrogen ion concentration of said water becomes a predetermined value.

56. A producing method as claimed in claim 55, further comprising: passing said polymer solution through a second filter medium so as to remove said undissolved particles from said polymer solution before casting said polymer solution, said undissolved particles having at least a second predetermined size, and said second predetermined size being larger than said first predetermined size.

57. A producing method as claimed in claim 56, wherein said polymer film is used as a protective film for protecting a polarizing filter.

58. A producing method as claimed in claim 57, wherein said polarizing filter is used in a liquid crystal display.

59. A producing method as claimed in claim 56, wherein said polymer film is used for an optical compensation film.

60. A producing method as claimed in claim 56, wherein the number of foreign materials which are contained in said polymer film and have a length of at least 20 μm is at most 0.03 in one square meter, and main contents of said foreign materials are Fe, Cr and Cl.

61. A producing method as claimed in claim 60, wherein the number of said foreign materials is at most 0.02.

62. A producing method as claimed in claim 56, wherein said polymer film is formed in co-casting method.

63. A producing method as claimed in claim 56, wherein said polymer film is formed in sequential casting method.

64. A measuring method for hydrogen ion concentration of a solvent which is not dissolved to water, comprising steps of:

adding a predetermined volume of water to a sample solvent which is sampled from said solvent, said volume being from 0.1 to 10 times as large as that of said sample solvent;

extracting water-soluble elements from said sample solvent by said water;

measuring a hydrogen ion concentration of said water which is separated from said sample solvent.

65. A measuring method for hydrogen ion concentration as described in claim 64, wherein time for contacting said sample solvent to said water is from 0.1 to 100 minutes.